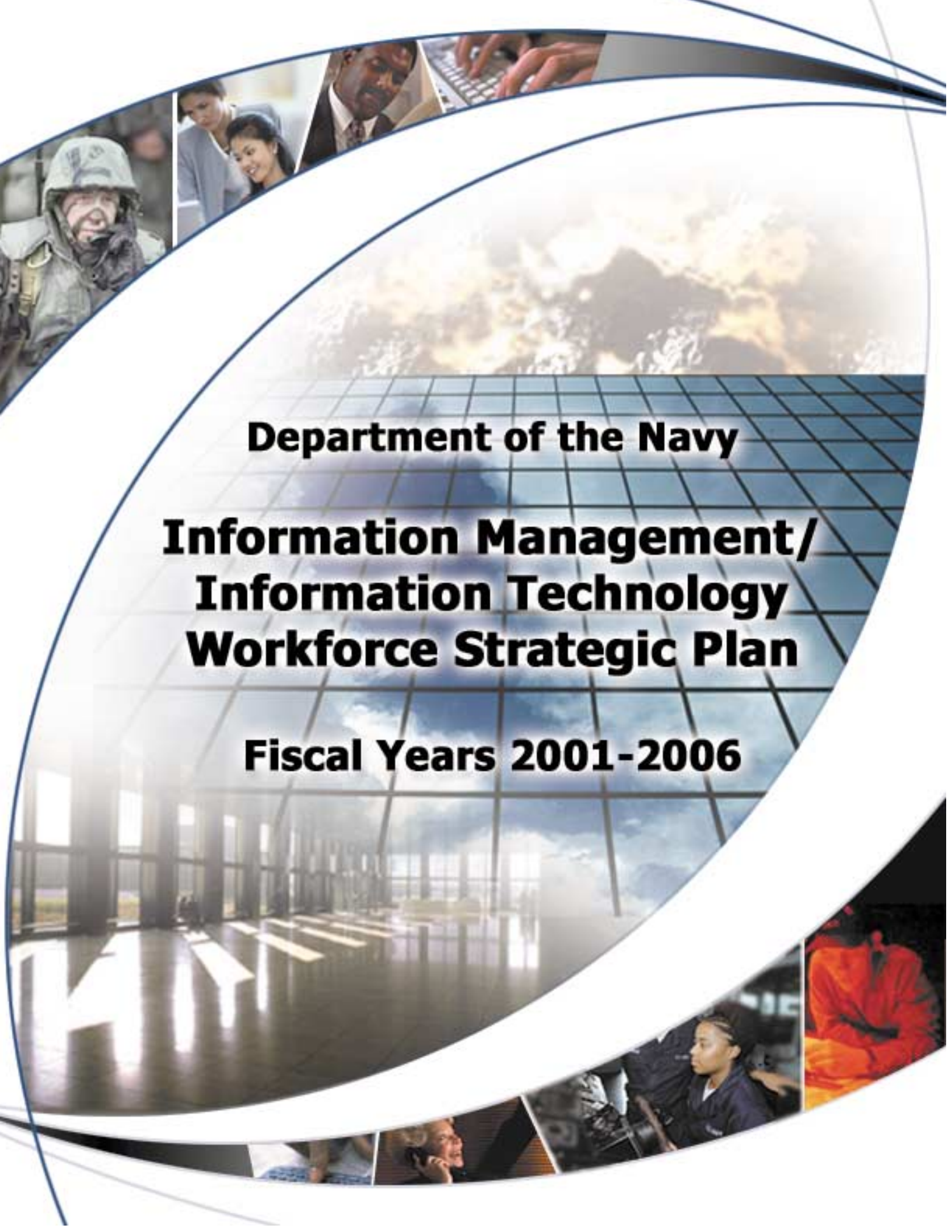

Department of the Navy

Information Management/ Information Technology Workforce Strategic Plan

Fiscal Years 2001-2006

Richard Danzig
Secretary of the Navy

ADM Vern Clark, USN
Chief of Naval Operations

GEN James L. Jones, USMC
Commandant of the Marine Corps

"Even as the Naval Services continue the transition to the capabilities needed for the future, today's Navy and Marine Corps must remain ready for missions and tasks that may arise at any time. Indispensable to our readiness posture are the men and women of the Navy and Marine Corps. We also know that many in corporate America characterize their search for quality employees — like the ones we seek — as being in a 'battle for people.' Consequently, the Naval Services must be prepared to compete strongly in this 'battle.' We must continue to put in place the resources to attract, train, and retain the people we need for the future...Maintaining our talented and skilled workforce requires constant attention."

From the *Department of the Navy 2000 Posture Statement*

Department of the Navy

Information Management/
Information Technology

Workforce Strategic Plan

Fiscal Years 2001-2006

Department of the Navy
Chief Information Officer

1000 Navy Pentagon
Washington, DC 20350-1000
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10.014.00

Contents

Military success across the spectrum of Navy and Marine Corps missions relies on exploiting information to maximize the effectiveness of every individual and every organization. To ensure success in every endeavor, the Department of the Navy (DON) is building a cadre of knowledge workers — educated, trained, and motivated military, civilians, and contractors — to develop and maintain its technological edge.

The challenges of a high technology workplace are significant. We are faced with the loss of corporate knowledge as individuals retire or leave government service; we are vying with private industry to recruit new personnel; and we are striving to provide meaningful career guidance and growth to sustain our current personnel. We can transform the workforce to meet these challenges with clear vision and direction, commitment from leadership, and a willingness to invest in our people. Both individual members of the workforce and human resource management systems will need to adapt to continuous change — in such areas as job characteristics, career paths, and reward systems — rather than treat change as occasional or episodic.

This plan, which identifies the way ahead for the IM/IT workforce, focuses on issues specific to the IM/IT community. But in a broader sense, it lays the groundwork for Human Resources to develop strategic partnerships with each functional and mission community to develop policies and procedures that integrate workforce planning and management with human capital and mission requirements.

The DON Human Resource System has much to do to prepare for the future. Many changes are needed, some internal to the DON, some requiring changes to law and regulation. Our overall goal is to develop an approach that will result in a highly qualified workforce, operating in an environment that motivates them to achieve mission objectives. We are ready to build our partnership with the IM/IT community to ensure we have the leadership, investment and planning strategies to develop our IM/IT workforce. We are ready, we are willing, and we are moving forward to meet the challenges of the 21st century workforce.

Vice Admiral Norbert R. Ryan, Jr.
Chief of Naval Personnel
Deputy Chief of Naval Operations
(Manpower and Personnel)

The Honorable Carolyn Howland Becraft
Assistant Secretary of the Navy for
Manpower and Reserve Affairs

Lieutenant General Jack W. Klimp
Deputy Commandant for Manpower
and Reserve Affairs,
Headquarters Marine Corps

Over the past few years we have seen a significant transformation in the Department of the Navy — one that capitalizes on the awesome potential of advanced information technology. We have focused on Network Centric Operations as the capstone concept for bringing networked organizations and technologies to bear in future battlespaces. Network Centric Operations leverage the distributed capabilities of our people, information, weapons and sensors to achieve faster and significantly improved effects with smarter, adaptive performance.

As we have refined our understanding of Network Centric Operations, we have developed insights into Knowledge Superiority, providing power through people — what they know, how they bring their knowledge together, and how they translate that knowledge into action. Now we can transform the DON into a knowledge-centric organization, ready to support the Joint Vision 2020 concept of Decision Superiority.

Achieving Decision Superiority requires organizational and doctrinal adaptation, command and control mechanisms, and relevant training and experience. These are the human dimensions of the knowledge equation. By managing the impact of these changes, we can effectively employ our financial and human resources to realize the benefits of this changing environment.

As we transform the DON through Information Technology — using Information Management to achieve Knowledge Management and, hence, Knowledge Superiority — we will focus on the people who support that transformation. We will support our technology requirements by identifying specific ways to hire, develop and reward employees who possess the competencies needed to further the development of high quality IM/IT services around the world — wherever the Navy and Marine Corps operate.

Moving forward into the 21st century, we cannot be tied to human resource strategies designed for the past. We must strengthen the partnership between the IM/IT and Human Resources communities to ensure we have the leadership, investment and planning strategies to recruit, develop, and manage our IM/IT workforce.

We understand the challenges. Now it is time to take action. This plan identifies the top-level goals and objectives for our IM/IT workforce. It focuses on how to address the issues of the IM/IT community so that we can continue our transformation into a knowledge-centric organization.

Vice Admiral Richard W. Mayo
Director, Space, Information Warfare, Command and Control Directorate

Mr. Dan Porter
Chief Information Officer, Department of the Navy

Brigadier General Robert M. Shea
Director, Command, Control, Communications and Computers Headquarters Marine Corps

Introduction

The *Department of the Navy (DON) Information Management/Information Technology (IM/IT) Workforce Strategic Plan* is the roadmap for a systematic approach to IM/IT workforce planning for the DON. Given the dynamic environment in which we live and work, with its rapidly changing demographics, technology and associated skill sets, the DON vision is to ensure it has *the right people with the right skills in the right jobs at the right times.*

Goal 8 of the *Department of the Navy IM/IT Strategic Plan 2000 – 2001* established high-level goals that responded to the Clinger-Cohen Act of 1996, which requires selected Federal government Chief Information Officers (CIOs) to "develop strategies and specific plans for hiring, training and professional development." The Department of the Navy then chartered a cross-functional/cross-organizational team to define an IM/IT workforce capable of performing the DON IM/IT mission and to identify the policies and practices needed to achieve that workforce.

Purpose

The *DON IM/IT Workforce Strategic Plan* identifies the goals and objectives that will allow the DON to identify, develop, and maintain the IM/IT workforce of the future.

Scope

As the DON transforms into a knowledge centric enterprise, *all* military and civilian personnel need an appropriate level of IM/IT competence. The DON population comprises three components:

- Those personnel, users of IM/IT, who require foundational IM/IT skills, including use of word processing, e-mail, on-line research tools, and decision making aids. For these individuals — who include virtually every member of the DON — IM/IT is a tool required to execute their primary jobs.

- Those personnel who may be employed in jobs for which they require an increased knowledge of IM/IT during their tenure in those billets/positions. These are “expert users,” and their required level of IM/IT expertise is specifically associated with




the jobs they need to accomplish.

- Those personnel who are focused on military and civilian IM/IT careers and whose responsibility is to provide IM/IT capabilities needed across the DON. These are the core IM/IT professionals, and they will require specialized and concentrated competencies, reinforced with foundational and continual training and education.

This strategic plan focuses primarily on the goals and objectives that will ensure the DON makes the organizational changes in its policies and practices to ensure that: 1) core IM/IT personnel are recruited, retained and provided with clear career opportunities and management guidance; and 2) expert users are provided with timely, tailored training opportunities that meet the situational requirements of their task, assignment or billet/position.

DON IM/IT Strategic Plan

Goal 8 of the *DON IM/IT Strategic Plan* calls for the Navy and Marine Corps to:

Build IM/IT competencies to shape the workforce of the future.

This goal focuses on:

- Providing Sailors, Marines and Civilians with the IM/IT competencies essential for success in the Information Age.
- Facilitating critical thinking skills that take maximum advantage of the richness of data and information enabled by IT.
- Providing training and education focused on both the IM/IT workforce and the IM/IT needs of the DON workforce.

To support that goal, the DON identified five objectives:

- Identify and sustain IM/IT core capabilities.
- Organize and manage the military and civilian IM/IT Professional Community and provide career development opportunities for the IM/IT workforce.
- Provide cost-effective IM/IT education, training and learning opportunities for our Sailors, Marines and Civilians.
- Develop and implement a strategy to facilitate critical thinking skills.
- Take advantage of IM/IT Distributive Learning opportunities.

The goals and objectives in this plan provide the way ahead to satisfy this strategic goal.

The Changing Environment

As we move into the 21st century, the DON vision, as described in *The Maritime Concept* in the *Navy's Strategic Planning Guidance*, is to ensure that future Naval forces can exploit new opportunities and capabilities to project power and influence anywhere in the world in the Information Age. To achieve that vision and keep pace with the change in the global, political, economic, technological and security environment, the DON must attain organizational agility through human resource management practices that are flexible and adaptable.

The Operational Environment

As stated in the *Maritime Concept*, while the traditional objectives of the United States will remain largely unchanged, changes in technology, doctrine, and operations will compel us to reassess continually the methods by which we achieve those objectives. As future Naval forces focus on the capabilities that assure US access and influence to shape regions of vital interest in the Information Age, maritime power projection will rest on two key factors:

- *Forward Presence*: Credible forces to promote our economic, political, and military interests.

- *Knowledge Superiority*
  - Exploiting technology improvements in organization and processes, resulting in unprecedented awareness and understanding of situations; and
  - Improvements in IT, matched with an agile and adaptive command organization to dramatically enhance capabilities.

While there will always be a requirement to ensure freedom of the seas, the Information Age has revealed a new international medium — cyberspace — that is critical to global exchange. The escalation of globalization through electronic media has accelerated the proliferation of information and technology — making cyberspace a crucial aspect of the battlefield.

The Best of Times?
Current Workforce Demographics

These are among the most prosperous times in American history. The nation is experiencing its longest peace-time economic expansion ever, its lowest unemployment rate, and lowest inflation rate. Much of this growth is attributable to IT— and as a result, the demand for highly skilled workers is growing at an extraordinary rate.

- IT is responsible for more than 1/3 of the growth of the US economy over the last five years.
- Over 10 million Americans earn their livings in IT-specific jobs. This points to a fundamental shift in the type of work performed.
- The Bureau of Labor Statistics (BLS):
  - Reports a 177% growth in jobs for core computer occupations (computer scientist, programmer, computer analyst) between 1996 and 2006, compared to 14% for other job areas.
  - Projects a 1.1% unemployment rate for core IT jobs between 1996 and 2006.
- The Department of Commerce projects that the US economy will need more than 1.3 million new core IT workers by the year 2006.
  - 1.1 million will be needed to fill new jobs.
  - 250,000 will be needed to replace workers who exit IT jobs.
- The Information Technology Association of America (ITAA) projects that of the 1.6 million jobs in the IT industry available in 2000, approximately half may be unfilled due to lack of qualified candidates.
- ITAA has found that the shortfall in IT workers is reflected in rising salaries – and projects a double-digit jump in starting pay.

What do these statistics mean to Federal IT managers? Most clearly, they demonstrate that the workforce is becoming increasingly technical and that the greatest demand in the labor market lies in the segment with the greatest shortage. The trend toward a greater proportion of employees becoming knowledge workers will continue. This means that it will be harder to recruit IM/IT professionals — with corresponding implications for the costs of outsourcing. All of these factors must be addressed organizationally to ensure the DON can meet the growing demands for increasingly integrated information.

"The nature of careers is affected radically by: economic change; new technology; and changes in business culture."

—The Institute for Employment Studies

The IM/IT Environment

Our ability to operate in a fully networked environment will lead to knowledge superiority, with improved decisions that give us the advantage of speed of command, which will be as important as our traditional weapons and platforms. At the same time, we will use our secure, robust, seamless networks to conduct enterprise-wide business operations, sustained by fully integrated and interoperable functional applications.

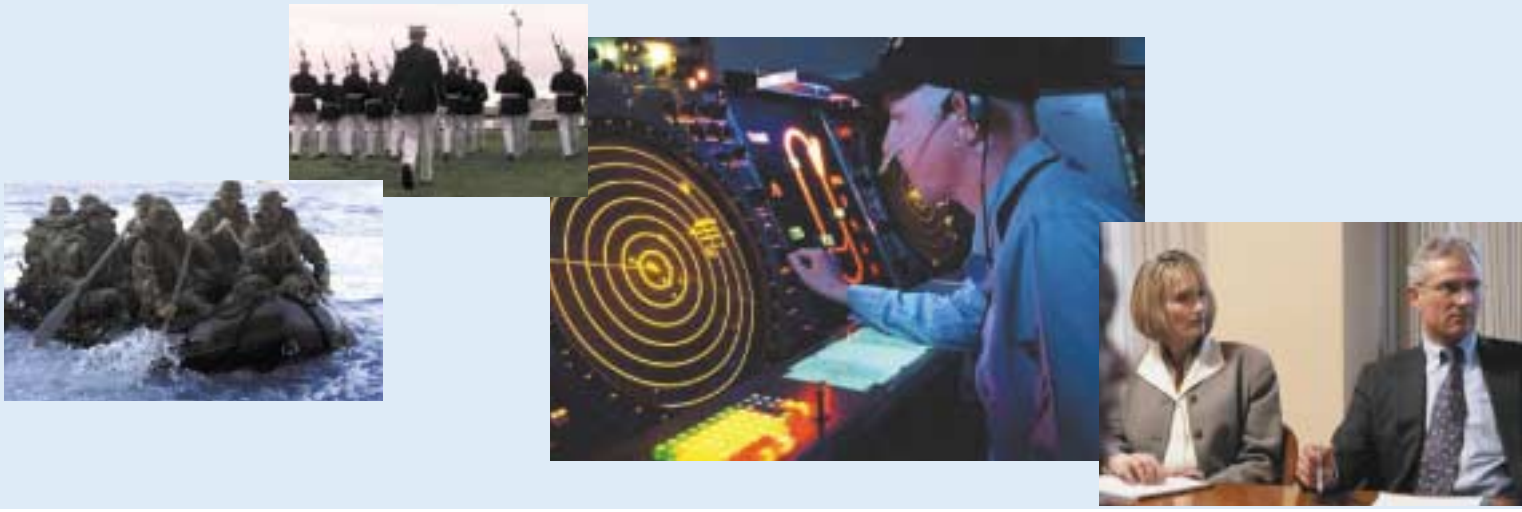
Our investments in network infrastructure will support our operations, ensuring that every command and every Sailor, Marine and Civilian will have the appropriate level of access to exploit network applications and services. Today, that includes IT21 programs afloat and the Navy Marine Corps Intranet ashore. This end-to-end capability will provide full connectivity across the afloat and ashore elements of the DON, ensuring the technological foundation necessary to host the applications to streamline all aspects of command and business functions.

New technologies and streamlined processes will change our organizational structures. As we leverage the network's reach across organizational boundaries, we will achieve enterprise-wide collaboration, information sharing and knowledge building that will further improve our military operations and day-to-day business practices. The result will be DON knowledge operations.

This extraordinary ability to exploit the power of information and knowledge will focus unprecedented interest in the IM/IT workforce. We know the human element is one of the key drivers in our success, so we must ensure we have the policies, practices, and resources to assure the versatile, motivated workforce needed to leverage the emerging IM/IT environment.

The Workforce Challenge

We must exploit our access to cyberspace to provide Naval, joint and combined forces with superior knowledge relative to that of our adversaries. Concurrently, we must develop the policies and practices to improve our business processes to achieve greater financial and knowledge efficiency. Finally, the DON must



address the way it executes workforce planning, so that we obtain and sustain IM/IT professionals with the competencies — knowledge, skills, abilities, and behaviors — needed to exploit new technology and information capabilities.

Trends in national labor are weakening the DON's ability to attract the people it needs. Many believe the US is facing a shortage of key IT professionals, and the demand for highly skilled IM/IT workers continues to grow at an extraordinary pace. Dominance in IM/IT is considered essential to the health of the US economy and a key enabler of future warfare.

To ensure we can meet our IM/IT needs, the DON is examining its current workforce, identifying future competency requirements, and laying the groundwork for the policies and practices that will cultivate an agile organization and a flexible workforce that respond not only to the knowledge environment currently envisioned, but to technology changes as yet unimagined.

Today's Workforce Management Practices

Today's human resources management practices are, to use an IT analogy, legacy systems that must be transformed to adapt to new requirements. The current organizational culture tends to be characterized by a:

- Formalized structure in which knowledge is power and information and decisions flow along a defined chain of command (stovepipes);
- Slow organizational change despite more rapid technological, political and social change; and
- Risk-averse management style.

This system has provided a stable, secure environment over the past several decades. It produced the workforce that dramatically changed the world through

DON Workforce Trends

The DON faces significant challenges in its IM/IT workforce, which is the catalyst for changing our IM/IT workforce policies and practices. To be effective in today's demanding environment, we must find ways to make our workforce policies, systems and processes flexible to meet our changing conditions.

Demographics

- An aging population:
  - One third of the civilian Computer Specialists will be eligible to retire in the next two years — i.e., by 2002.
  - Nearly one-half of all Federal workers are approaching retirement.
  - The mean years of service is 19 and the mean age is 46.
  - The proportion of the workforce under the age of 30 has declined from 18 percent in 1989 to 6 percent in 1999 while the percentage of workers between the ages of 31 and 40 has declined from 30 to 23 percent.
- Sixty-one percent of workforce positions are eligible for A-76 studies.
- Competition with the private sector:
  - Perceived lack of "cutting edge" jobs.
  - Fewer incentives to attract a younger workforce.
  - A serious disparity in pay with the private sector. Department of Commerce has found that the private sector pays between 50 and 100 percent more for entry level IT workers.
- FY99 Marine Corps officer statistics show that while the Corps estimates an 9.6% attrition rate for officers, actual attrition rates average 10.1% in general — and 13.2% for officers with specialties in IM/IT.

"Leading organizations understand that effectively managing employees, or human capital, is essential to achieving results. Only when the right people are on board and provided the training, tools, structure, incentives and accountablity to work effectively is organizational success possible."

—GAO Report "Addressing High Risks and Improving Performance and Accountability"

technology. Ironically, as those changes continue, the old paradigm will not meet the needs of the new knowledge world that is being created. All employers are faced with the need to develop new, responsive management techniques to be able to recruit and develop the next generation workforce.

Tomorrow's Workforce

As we integrate the next generations of workers, we are faced with revolutionary changes. Labor and workforce trends are redefining the traditional ideas of jobs and careers. The way work is organized today, the rigid notion of a “job” does not allow organizations to adapt quickly enough to manage evolving environments and groundbreaking technology.

While access to information was the single most important factor in traditional organizational structures, the generation brought up in the Information Age has a different approach to knowledge. We have entered an age in which technology gives the workforce access to increasing resources. Telecommunications, the Internet, groupware connections and intranets all allow workers to share knowledge quickly and efficiently. The new generation is computer-literate and accustomed to access to enormous amounts of information in our networked society. The members expect to be part of a more autonomous, global and electronically networked community. Virtual offices, dispersed personnel, and broad access to information will make the next generation organization more fluid and will require more flexible work rules.

These technological and workforce changes are propelling new levels of efficiency, altered organizational structures, and worker independence. Job titles and job descriptions will lose importance as organizations key on competencies for assigning workers. *Ad hoc* project teams will replace rigid hierarchies. Workers will expect to transition across a range of tasks and positions during their careers; they will expect to be continuously learning to increase their skills and knowledge and sustain high performance.

These changes are redefining the relationships among the organization, the work and the worker — changing the face of the workplace forever.




The Direction for the DON

As the DON moves forward, we are confronted with questions of how to deal with both the military and civilian elements of our workforce. For example, we must continue to recruit enlisted personnel and officers at the right rate and assign them to billets that nurture their careers and the needs of the Services, while ensuring that promotion and retention levels meet Service needs for grade structure and experience. At the same time, we must periodically and expeditiously refine the requirements for each assignment, so job qualifications reflect the changing work environment.

For civilians, our challenges include an outdated human resources system that lacks integrated planning for manpower needs and consistently filters civilian labor decisions through a budget lens. In addition, the *image* of a system that is overregulated and inflexible is unappealing to many new and ambitious employees.

Finally, our training and education are inadequately funded and only now beginning to take advantage of the full range of technological advances.

As noted above, changes in the demographics of the workforce, in the education and skills required of its workers, and in basic employment structures and arrangements are all starting to unfold. More and more, the work of the DON requires a knowledge-based workforce that is sophisticated about leading-edge technology, flexible, and open to continuous learning.

DON Workforce Trends - continued

Environmental Factors

- IM/IT will continue to expand, affecting warfighting capability and methods, creating new demands for the number of people and types of skills in the DON workforce.
- Technical complexity will place demands on the DON to gear its workforce systems, policy and philosophy to attract and develop the talent required to sustain the organization.
- The need for a highly educated workforce — particularly IM/IT scientists and engineers — will increase as the technical complexity of the workplace continues.
- There will be greater use of contract personnel to perform support functions, as well as to carry out some direct mission functions, currently performed by military and federal civilians.
- There will be greater use of contingent (part-time, temporary, and contract) employees as work is increasingly organized around projects rather than functions, resulting in lower costs and the ability to align core competencies with work requirements.
- There will be greater integration of civilian, military and contractors performing Navy work, so managing intellectual capital will be the key to effectiveness.
- Workers will be more mobile and flexible. People management approaches will have to accommodate this or face a loss of talent.

Workforce Planning

The DON is committed to comprehensive workforce planning — identifying the actions necessary to acquire and develop the human resources for our changing mission and technology environment. This requires us to identify the best mix of military, civilian, and contractor personnel based on mission, work needs, competency requirements, labor market conditions, public policy, and cost. The desired outcome is the best total force — a workforce that provides the highest probability of achieving our DON mission.

To develop an adaptive IM/IT workforce that is competency-based and flexible enough to respond to emerging technologies and demands for knowledge, this document takes a strategic view of "human capital" — that is, all the technical and interpersonal competencies possessed by the individuals in the organization. Because human capital is vital to our success, we must identify innovative approaches to developing and managing it.

Strategic workforce planning is the key to ensuring that the DON is developing the right IM/IT workforce — one that has the competencies to meet the needs of the organization. By making conscious decisions to invest time, money, status, and energy to improve our workforce planning processes, we can ensure we are building the human capital that we can leverage to accomplish our mission today — and tomorrow.




Issues

The following questions highlight the workforce planning concerns the DON examined while developing the goals and objectives for the IM/IT workforce.

- How does the DON identify the requirements and competencies needed to meet future IM/IT requirements?
- How does the DON ensure that workforce planning is institutionalized to continuously address future requirements and an evolving workforce?
- How does the DON train the IM/IT workforce needed to support current Fleet requirements?
- How does the DON recruit and support its IM/IT workforce to meet its emerging needs?
- How can the Navy sustain core KM/IM/IT competency in its military officer corps? Should there be an information professional community dedicated to achieving Knowledge Superiority to enable maritime power projection through the acquisition, operation, protection, and maintenance of the Global Information Grid?
- How does the DON address compensation factors, so it can attract and sustain core IM/IT capabilities?
- How does the DON address varying skill requirements, such as the ability to maintain and operate legacy systems while transitioning to new systems?
- How can the DON develop and apply mechanisms to meet flexible staffing requirements? How can the DON better articulate its staffing requirements?
- How does the DON provide its IM/IT workforce with developmental opportunities to satisfy the demands of changing technology?
- How are DON outsourcing plans affected by IT worker shortages in the civilian job market — what are the funding ramifications?
- What policies and procedures will support management of a “mobile” workforce that wants to transition in and out of government?

Defining The IM/IT Workforce

Figure 1 illustrates the breadth and integral nature of the IM/IT workforce across the entire DON. Because IM/IT is a key enabler of most DON processes — both in warfighting and warfighting support functions — the IM/IT workforce emerges as a functional group supporting every mission community. While each mission community has its unique operational and sustainment requirements, IM/IT is essential to meeting those needs. The IM/IT workforce must be able to develop the competencies to sustain core IM/IT capabilities. At the same time, its members must be provided opportunities to specialize in a mission community.

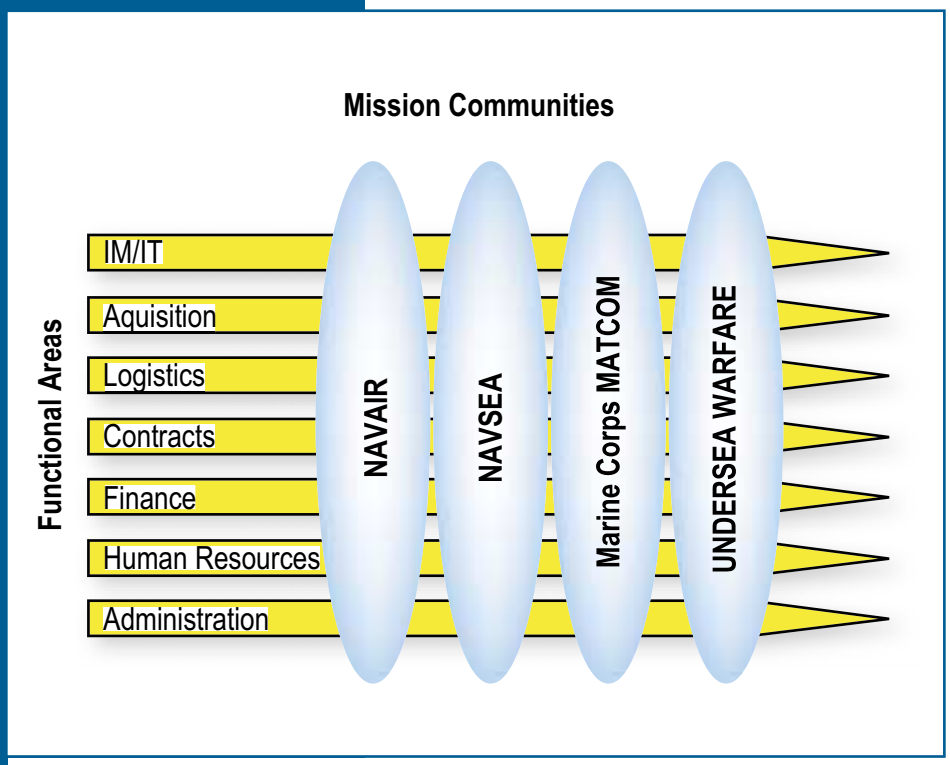


Figure 1. The IM/IT Workforce Spans the Navy's Mission Communities

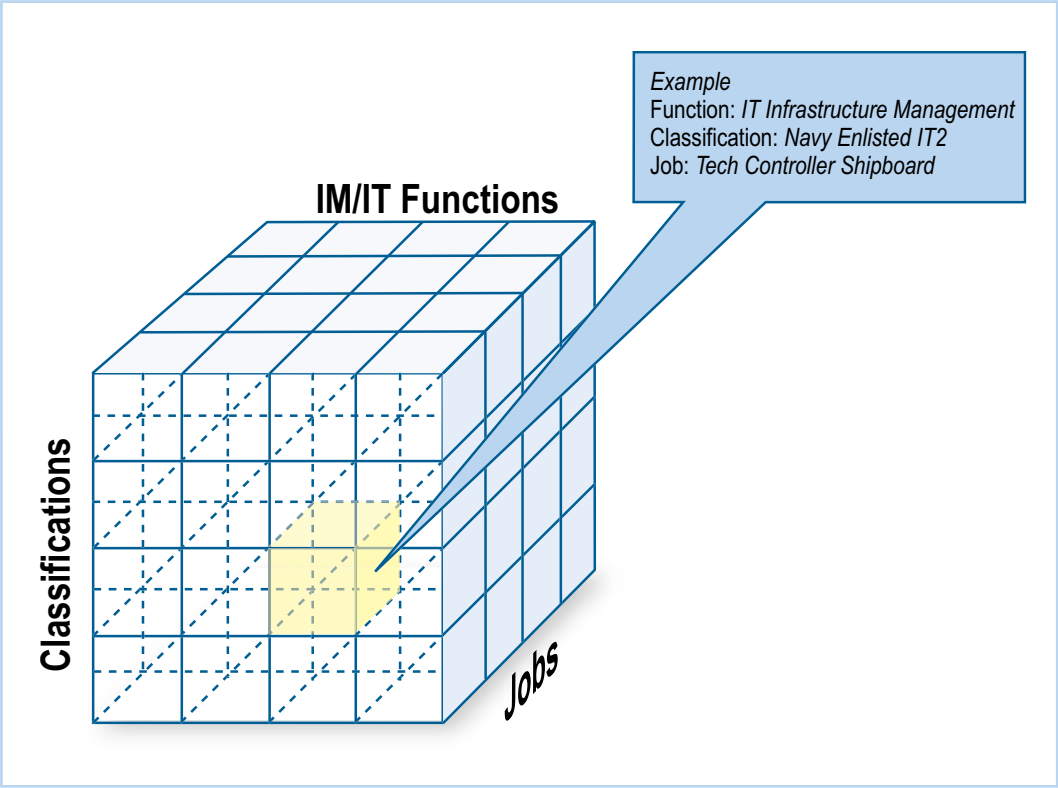


Figure 2. Elements of the IM/IT/KM Workforce

Mission of the IM/IT Workforce

The DON IM/IT workforce identifies, initiates and supports advances in technology and business processes that improve management of technology, information and knowledge to support the Department of the Navy's goals of Forward Presence and Knowledge Superiority.

Scope of the IM/IT Workforce

To capture the relevant workforce in the IM/IT core and expert user groups, this plan concentrates on three elements: IM/IT functions, occupational classification, and jobs. The relationship among these elements is shown in Figure 2.

As human capital grows in value, it becomes essential to construct the right total force and allocate responsibilities across that total force. The DON CIO has identified the scope of IM/IT in the *DON IM/IT Inherently Governmental Functions* document. These IM/IT functions include the management, leadership and military operation of:

- Information Management
- Knowledge Management
- IM/IT Strategic Planning
- IM/IT Investment Planning
- IM/IT Workforce Planning
- IM/IT Architecture
- IM/IT Acquisition
- IT Infrastructure Management
- E-business
- Information Operations

The core group of the IM/IT workforce is defined as those military and civilian personnel who are focused on IM/IT careers and whose responsibility is to provide IM/IT capabilities needed across the DON. These individuals perform these functions throughout their careers and hold IM/IT occupational classifications (listed in the appendix). Expert users are those who may be employed in *specific jobs* for which they require an increased knowledge of IM/IT during their tenure in those billets/positions. Their required level of IM/IT expertise is specifically associated with the jobs they need to accomplish and their occupational classifications may not lie in the IM/IT specialties. Individuals who are performing IM/IT functions, but whose occupational classifications are not shown in the appendix, may need to have their jobs reviewed.

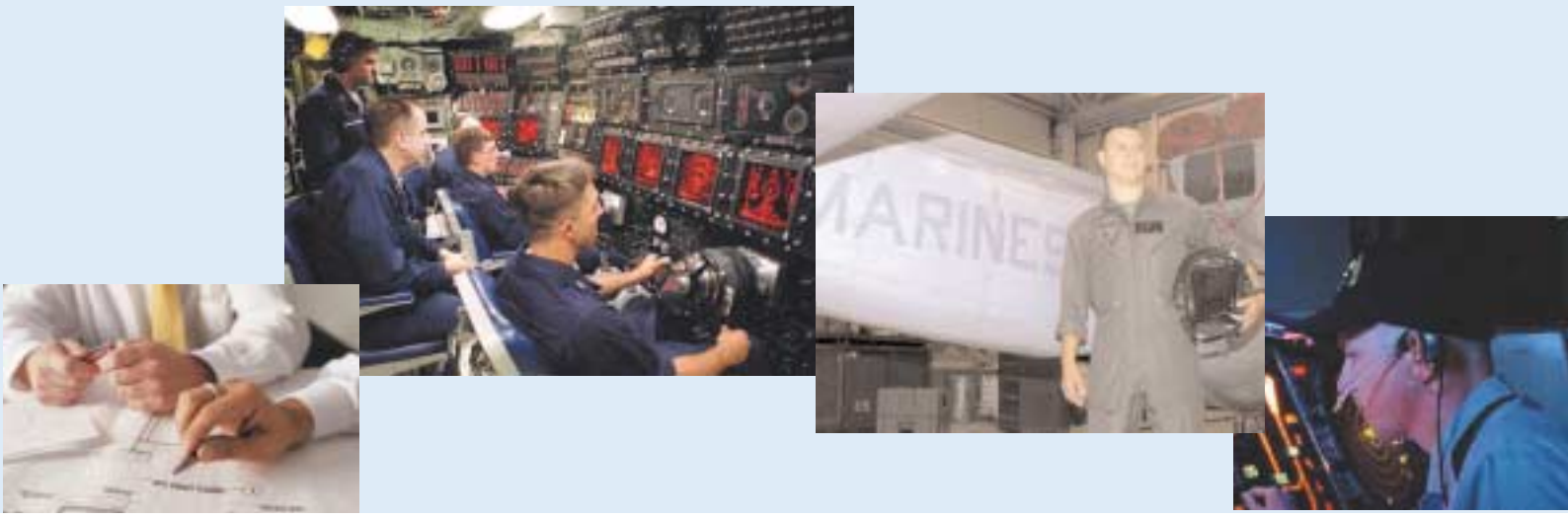
IM/IT Workforce Planning Assumptions

- The DON will continue to need a core IM/IT workforce for the foreseeable future to manage existing information technology, to identify future technology that will further the DON mission, and to determine how best to employ that technology.

- The rate of change of technology and information management will continue to increase. Work efforts will be created, changed, or eliminated rapidly, necessitating vigorous management and maintenance of IM/IT competencies.

- Rapid advances in technology, coupled with the shift in the use of information and knowledge in the workplace, will have a profound impact on training requirements.

- The core IM/IT workforce is likely to decrease in size. The core KM workforce will increase in size.



Determining "Core" and "Expert Users" for Military Personnel

Core enlisted personnel are identified by their ratings, Navy Enlisted Classification (NEC) or Military Occupational Specialty (MOS). While they may be assigned to jobs outside their rating, their primary duties are within the IM/IT discipline. Navy officers may alternate between assignments in their warfare specialty or staff/restricted line community and their IM/IT subspecialty. If they consistently return to IM/IT and show growth in IM/IT expertise, they are treated as part of the core community. USMC IT officers will spend three-fourths or more of their careers in IM/IT-related billets. *Core assignments include*:

- Information Technology Specialists or Marine communicators operating DON networks.
- Space, Information Warfare, Command and Control (SIWCC) Subspecialists or Marine IM/IT officers assigned to staffs as Chief Information Officers or Chief Knowledge Officers.
- A Department Head at Network Operations Center with either a C4 MOS or SIWCC subspecialty.
- A Limited Duty or Warrant Officer with an IM/IT designator assigned to a shipboard C4I department, a Marine Expeditionary Unit, or other tactical organization.

Examples of jobs in the Expert User group include:

- A warfare qualified officer, normally detailed to jobs outside the IM/IT discipline, assigned to oversee the acquisition of an IT system for a platform.
- A Fire Controlman responsible for operating and maintaining an electronic system.

Determining "Core" and "Expert Users" for Civilian Personnel

Examples of job titles in the core include:

- Librarians who provide research and information management.
- Electrical Engineers who deal with computers and communications.
- Operations Research Analysts who deal with IT and Business Process Reengineering.

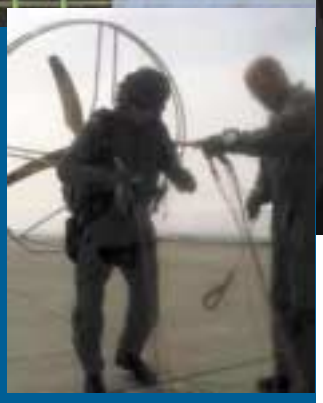
Examples of Expert User jobs include:

- Budget Analysts who manage resources for IT programs.
- Operations Research Analysts who manage computer based analytical tools, including modeling and simulation, optimization programming, etc.

Future jobs that will be considered core are those currently under development in the area of Knowledge Management, including knowledge engineers and knowledge community leaders.

Some employees will require case-by-case evaluation to determine their status as core or expert user. These include members of civilian series such as Program Analysts and Environmental Specialists, where the actual work may fall into the IM/IT area.

Workforce Planning Goals



Shaping a workforce requires a knowledge of the *competencies* required, as well as an understanding of *how many* employees are needed to accomplish the mission. To achieve a knowledge centric environment and effect streamlined business operations, the DON will require a special kind of workforce — engaged in new activities, working across the entire enterprise, employing new skills, and moving through changing career paths.

A systematic approach to workforce planning will facilitate the development and management of that workforce, creating more efficient and accurate alignment of people, competencies, and job requirements to meet organizational goals, commitments and priorities.

The workforce planning goals presented on the following pages are designed to help the DON develop policies and procedures to plan for, recruit, retain, advance, and nurture the IM/IT workforce that can meet the DON IM/IT strategic vision.

"Leading organizations understand that effectively managing employees, or human capital, is essential to achieving results. Only when the right people are on board and provided the training, tools, structure, incentives and accountablity to work effectively is organizational success possible."

GAO Report "Addressing High Risks and Improving Performance and Accountability"

Goal 1: Restructure the processes used to identify and manage IM/IT workforce manpower requirements

To ensure the right balance of military, civilian and contractor staff in the IM/IT workforce, the DON must develop a holistic approach to determining manpower requirements across the entire system. New processes should result in the DON's ability to structure its IM/IT workforce to meet current needs and respond more quickly to changing operational demands and technology cycles.

Currently, the military manpower process does not capture true operational workloads, nor does it account for the constraints imposed by funding, policies, or acquisition of new technology. Military manpower planning is inadequate because it is designed to reflect current, rather than future, requirements. To improve, the DON will have to examine its overall strategy and develop new military manpower processes that integrate the interests of multiple stakeholders, providing integrated methods for projecting future requirements.

There is general consensus that there is no process to identify civilian manpower requirements. Rather, they are decided by program area and driven by funding choices rather than by mission. The civilian manpower process demands new procedures and models for determining how many civilians are required, and the necessary competency mix.

Defining competencies for all billets and positions will help the DON validate and adequately resource requirements.

Objectives

- Implement a competency-based process for determining manpower requirements.
- Re-engineer the manpower processes to improve the speed with which requirements are approved and acted upon.
- Exploit best practices for managing evolving manpower requirements.
- Modernize the processes to identify DON manpower needs for future information technology and migration from legacy systems.
- Ensure processes are in place to require appropriate IM/IT competencies in the career paths of all DON employees.

Best Practices

The National Security Agency (NSA) converted its current occupational structure from task-based to skills-based and developed a personal skills inventory tool to track the discrete skills, abilities and experiences of the individual members of the workforce. This allows NSA to define jobs in terms of the skills required to improve their workforce planning process, as well as to calculate gaps between job requirements and workforce competencies.

The Department of State has developed an IT Training Project in which it identifies employee skills, reconciles the department's skill requirements with skills availability, and then develops a plan to ensure employees' skills are matched to mission requirements.

Goal 2: Optimize recruiting of the IM/IT workforce

Across the rapidly expanding IM/IT field there is a war for talent. The DON must find a way to market the challenges and rewards of an IM/IT career, whether military or civilian. There is general consensus that the DON cannot compete with the private sector in the labor market based on pay alone. Military recruiters use the branding message, "It's not just a job, it's an adventure," to highlight the potential of a military career choice. The DON needs to market its civilian work in much the same way. Among the features that can be "sold" are the ability to be part of a high-tech organization where responsibility comes fast, experience can be broad, and developmental opportunities extensive. Concurrently, the DON should examine ways to capitalize on recruiting incentives, such as bonuses and retention allowances.

The DON must match recruiting and hiring goals and practices to its requirements, targeting individuals with the competencies to accomplish core IM/IT functions or (in the case of entry-level personnel) the aptitude to acquire the competencies. In the enlisted ranks, the DON must avoid ratings and MOS imbalances that result in a failure to meet future force structure requirements. A disconnect between recruiting and manpower requirements will result in continued accession and training of people in skills not needed for the long term. In the civilian community, the DON must explore ways to streamline recruiting processes.

The DON can shape its workforce through improved recruiting efforts across the personnel spectrum: entry, mid and senior levels. The system must provide more effective tools to bring in contingent employees, and offer instruments such as market-based pay, flexible workplace options, and other incentives.

Objectives

- Use a strategic workforce planning process to develop recruitment projections for military and civilian elements of the IM/IT workforce and ensure that accessions meet identified requirements.
- Establish strong relationships with the best recruiting sources — both inside and outside the Federal government — for entry-level, mid-level and senior recruitment.
- Employ innovative recruiting techniques and procedures that are friendly to applicants and recruiters — streamlining and simplifying submission and handling of applications.
- Market the professional challenges provided by the work of the IM/IT workforce.
- Identify and implement metrics to measure IM/IT aptitude and capability.
- Investigate and apply appropriate incentives to attract IM/IT professionals to the DON.

Best Practices

For civilian personnel, The Office of Personnel Management (OPM) has published *Recruiting and Retaining Information Technology Professionals* (1998) addressing human resource management flexibilities. Among these are making the job search process more accessible through use of the Internet, telephone and electronic bulletins; use of financial tools such as paying for travel to interviews and advancing pay; offering recruitment and relocation bonuses; allowing varying work schedules; and making temporary appointments to fill short-term staffing issues.

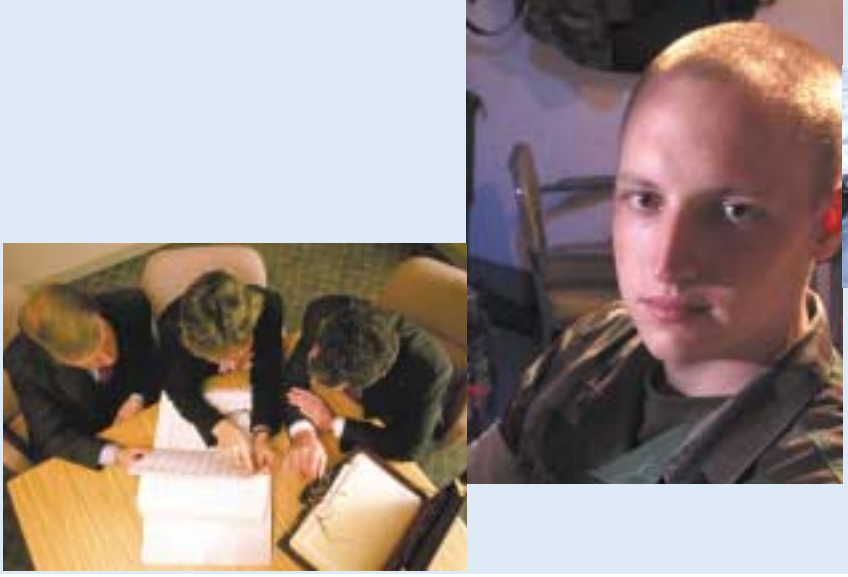
The Department of State has accelerated its civilian recruitment activities by offering 10 – 25 percent bonuses to applicants in the Computer Specialist and Telecommunications Specialist occupational series.

The National Aeronautics and Space Administration (NASA) has introduced a program called the *NASA Contracting Intern Program* (NCIP). Recruiters identify college candidates to participate in co-op positions. If this works well, the student is hired as an intern under the Student Career Experience Program. After the internship, the candidate is hired as a permanent employee. Each phase is conducted in a different part of NASA, resulting in an employee who is well-trained and knows several areas of the organization.

The Census Bureau has significantly increased speed of civilian hiring by developing an automated system, implementing an online job application. The questionnaire links competencies to a position to be filled. Applicants complete the job questionnaire through an Internet site. The electronic information is transmitted to the Census Bureau for review and evaluation. Job managers handle candidate selection up to the point of an offer, at which time the Human Resources Office takes over.

Goal 3: Modernize training and education and maximize IM/IT learning opportunities for the workforce

Investing in the DON's human capital will improve mission accomplishment by ensuring the workforce is knowledgeable and effective. It is not possible to achieve a functional IM/IT workforce that is prepared to meet the technical and management challenges of the future without leadership commitment and financial resources. As information management techniques, knowledge management techniques, and information technology advance, investments in training, education, and continuous learning become critical to ensuring high performance. Organizational efforts to support a learning environment can include counseling, funded education and professional development, in-house training, and memberships in professional associations. Both the military and civilian IM/IT communities need systematic development of essential competencies.



Objectives

- Develop a DON Human Capital Investment process for the IM/IT workforce.
- Create a continuous learning environment that allows individuals to obtain the skills necessary to adapt readily to change.
- Ensure training and education content and delivery reflect new technology and state-of-the-art business practices.
- Improve the process for identifying and managing training and education requirements.
- Partner with industry to create alternative learning programs and opportunities.
- Ensure all members of the DON workforce are provided adequate opportunity to gain the IM/IT competencies required to accomplish their jobs.

Best Practices

The Federal Aviation Administration (FAA) Office of Research and Acquisition, after identifying the need for significant change in the organization's performance, established a human capital investment strategy to achieve improved organizational performance. The FAA created a team to target investment opportunities and develop metrics to determine the effectiveness of the investment.

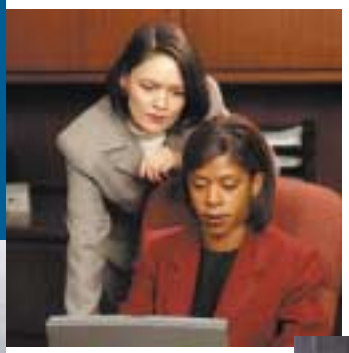
The US Fish and Wildlife Service implemented a continuous learning policy in 1998, setting an annual goal of 40 hours of learning experiences for all permanent, full-time employees. In addition to classroom training, the policy credits learning through self-studies, conference and workshops, shadowing assignments, developmental details and on-the-job training. Guidelines stress the need for supervisors to work with employees to identify development needs, make resources available, and support the learning process.

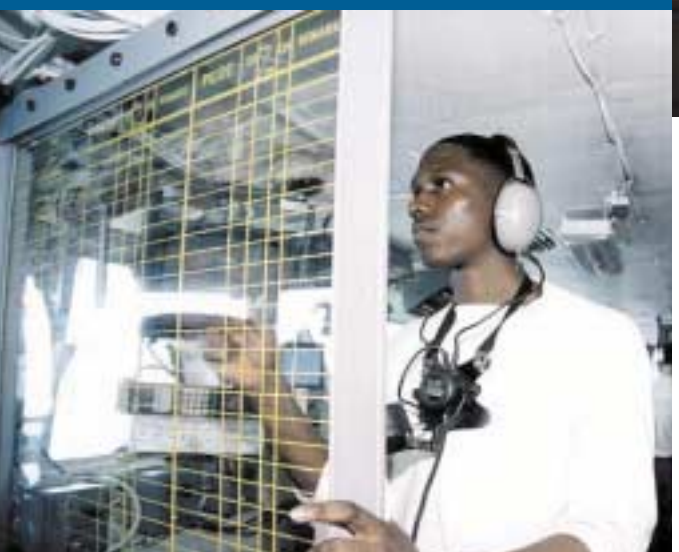
The Census Bureau has implemented a competency-based training program that is designed to develop a more diverse, effective, and skilled workforce. Based on best practices, the Census Bureau chose a set of “off-the-shelf” competencies and deployed a set of tools and procedures to capture assessment, feedback and development planning. This streamlined process met the Bureau's strategic plan without generating a long-term research project and development of a unique competency model.

Goal 4: Employ the right person in the right job at the right time

To respond to dynamic changes in IM/IT workforce requirements, organizations must be flexible and agile. They must be able to shift employees — and employees must be able to move — to apply talents where they are most needed. The imperative is to optimize DON IM/IT workforce effectiveness and mission performance by using proven and innovative ways to place people in traditional and non-traditional job settings.

The current DON civilian system is a “one size fits all” structure. It limits management's ability to tailor programs to meet changes in mission, demographics, or occupational evolution. The DON must be able to hire and detail civilians quickly, adjusting to staff short-term projects and defining the best alignment of billets and positions with the DON mission. For military personnel, the current training and distribution structures often delay filling a job with the right person.





Objectives

- Implement strategies that encourage flexibility to align personnel with emerging and evolving job assignments. For example, foster the capability to staff *ad hoc* teams and organize for short-term project assignments. To handle declining job requirements, develop policies to allow for no-fault realignment of personnel whose competencies are no longer needed in a particular organization.
- Create incentives for mobility, such as increased opportunities for development and advancement.
- Create a career development process within the military and civilian IM/IT community that includes definition of career paths, competency models and individual development strategies and that offers continuous learning through work assignments and formal training.
- Establish IM/IT competency standards that support qualitative performance assessment (by function and grade).
- Promote the use of varied civilian appointments (permanent, term, and temporary), part-time employees, interns, and contract staff to balance needs for continuity with requirements for rapid workforce shaping and competency alignment.

Best Practices

The National Security Agency (NSA) has used its skill inventory tool to improve the way it employs its people. When special projects or crises arise, NSA Human Resource specialists use the skills inventory to facilitate the identification of personnel with the required competencies so they can be moved to respond.

The Defense Finance and Accounting Service (DFAS) has identified technical competencies for job series and developed career path guides that assist employees in determining education and experience opportunities for their series and grade to build technical competencies. Additionally, DFAS initiated the Professional and Leadership Certification Program so selected employees can participate in rotational assignments to develop skills in different job series, enhancing both their careers and value to the organization.

Goal 5: Sustain the right capabilities in the IM/IT workforce

Identifying and sustaining critical competencies is the bedrock of a high-quality IM/IT workforce. Focusing retention efforts on those individuals with the demonstrated talent in core competencies and the motivation for high performance and continuous learning will ensure key capabilities are supported. Creating a culture that is intellectually and technologically stimulating for the workforce will motivate excellence. The DON can enhance retention through the use of innovative incentives, such as expanded opportunities for mobility, including work in the private sector. Additionally, academia and industry personnel can be introduced into government to share their knowledge and experience. This revolving door policy will enable synergy between the two sectors.




Objectives

- Foster innovative partnerships with industry and academia, and "job exchanges" between federal and private sector and other non-federal organization personnel for specific assignments.
- Encourage career mobility within the government.
- Baseline and continuously update the competencies that are critical to the DON IM/IT workforce and shape the workforce through structured retention by identifying appropriate policies and incentives to retain IM/IT professionals.
- Develop a Navy officer information professional community dedicated to achieving Knowledge Superiority to enable maritime power projection through the acquisition, operation, protection, and maintenance of the Global Information Grid.
- Strengthen partnerships among CIOs and other leaders with administrative or operational influence on the IM/IT community so they can recommend human resource policies that will assist in maintaining the IM/IT community.
- Provide a quality of work life that encourages retention, including maximum flexibility in civilian work alternatives, expansion of Quality of Life initiatives, and variable benefits.
- Establish metrics to ensure workforce retention goals meet identified manpower requirements.

Best Practices

On 1 October 1999, Department of State (DOS) announced a new IT Professional Skills Pilot Program, aimed at retaining employees with critical IT skills and increasing the expertise and stability of the DOS IT workforce through financial recognition of formal education and certification in key technical areas. Bonuses of 5, 7, 10 and 15 percent are provided for specific education and certification. To help employees acquire professional skills that benefit the Department, the DOS has revamped technical courses to support professional exam requirements and geared distance learning opportunities to industry certification exams.

Goal 6: Establish best practices within the IM/IT community

Senior military and civilian leadership must provide the vision, motivational structure and direction to efforts that develop and support the IM/IT workforce. Leadership should promote best practices to nurture an organizational culture that emphasizes teamwork, knowledge sharing, individual flexibility, empowerment and results. DON IM/IT leaders should create incentives that encourage the IM/IT community to share knowledge within its own discipline, and champion the tools and processes that support knowledge sharing across the DON.




Objectives

- Communicate a shared vision for IM/IT mission, strategic goals, and core values.
- Establish models and training programs to ensure the IM/IT military and civilian leaders are trained in the skills needed to lead the IM/IT workforce.
- Lead the DON in knowledge sharing and support pilot programs that give visibility to successful Knowledge Management concepts.
- Support and reward teaming and knowledge sharing to achieve high performance. For example, use performance management systems, including pay and other meaningful incentives, to link rewards to leadership and to team performance.
- Encourage the development of IM/IT Communities of Practice and Interest and develop the role of community of practice integrator as part of the IM/IT workforce.

Best Practices

The Army Medical Department's Center for Healthcare Education launched the Knowledge Management Network (KMN). The catalyst for the KMN was reduced funding available for training, combined with the need to capture and share best business practices across the community and to make tacit knowledge explicit. The goal is to provide the workforce with access to the needed amount of knowledge and information “just in time.” The system is based on the belief that leveraging the organization's human capital requires continuous learning, organizational performance improvement, and collaborative work practices. To date, the program has increased productivity, decreased cycle times for learning, creating, and preserving intellectual capital — resulting in savings and avoided training costs.

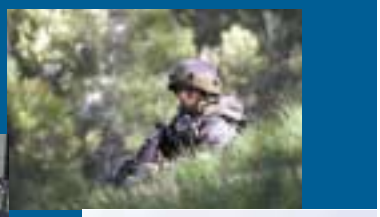
The DON CIO-sponsored Investment Practices IPT has established a Community of Interest for portfolio management. When the IPT representatives participate in meetings and conduct briefings, they provide a brochure to anyone interested in joining. The Community of Interest ensures that members receive and are able to exchange information through the use of web tools, events and workshops.

The DON CIO has created a CD ROM that describes the Knowledge Centric Organization and provides background, concepts and tools that help DON organizations become more proficient in KM.

Conclusion

The fast-paced evolution of IM/IT, coupled with the proliferation of processes enabled by IM/IT that span the entire DON, requires a comprehensive strategy to support the people who develop and sustain the IM/IT capability. There is an urgent need for the DON to address the deficiencies in managing its IM/IT workforce

This document lays out the framework for identifying and creating effective solutions to IM/IT workforce issues. Some of the objectives will be difficult to achieve, and the actions will require coordination across the DON. The way ahead for these strategic goals will be developed in follow-on implementation plans. However, these plans are essential if the DON is to leverage its human capital, moving forward with a workforce capable of supporting this critical mission area.



Glossary

Competencies: Knowledge, skills, abilities, and behaviors.

Corporate Capital: The intellectual property, databases, processes, organizational agility, etc., possessed by the organization.

Decision Superiority: The ability to take advantage of superior information, convert it to superior knowledge and make better decisions that are arrived at and implemented faster than an opponent can react, or in a non-combat environment, at a tempo that allows the commander to shape the situation, react to change, and accomplish his mission. Decision superiority takes into account organizational and doctrinal adaptation, relevant training and experience, and proper command and control mechanisms and tools.

Human Capital: All the expertise, experience, capability, capacity, creativity, adaptability, etc., possesed by the individuals in the organization.

Information Superiority: The capability to collect, process and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same. Information superiority is achieved in a noncombat situation —or one in which there are no clearly defined adversaries — when friendly forces have the information necessary to achieve operational objectives.

Intellectual Capital: All the learning and infrastructure that contribute to organizational success. Intellectual capital includes human capital, social capital, and corporate capital possessed by the organization.

Knowledge Centric: The ability to leverage personnel and technology assets jointly, creating knowledge and then delivering the insights created quickly to the right person at the right time to solve problems.

Knowledge Management: A business process that enables an organization to leverage knowledge to create advantage. It can be viewed as a process for optimizing the effective application of intellectual capital to achieve organizational objectives. This manifests itself in innovation, productivity, agility, competencies, individual or team performance.

Knowledge Superiority: The ability to achieve a real-time, shared understanding of the battlespace at all levels through a network that provides the rapid accumulation of all information that is needed — and the dissemination of that information to the commander as knowledge is needed — to make timely and information decisions inside any potential adversary's sensor and engagement timeline. In peacetime, it is the assured knowledge that allows the commander to shape events in a region.

Social Capital: The relationships, human networks, language, etc., possesed by the individuals in the organization.

Appendix

Core and Expert Users

To capture the relevant workforce in the IM/IT core and expert user groups, this plan concentrates on three elements: IM/IT functions, occupational classification, and jobs. The tables below list the key military occupational classifications (designators, subspecialty codes, NECs, MOSs) and civilian occupational series associated with IM/IT.

The core group of the IM/IT workforce is defined as those military and civilian personnel who perform these functions throughout their careers and hold IM/IT occupational classifications. They will require specialized and concentrated competencies, reinforced with foundational and continual training and education.

Expert users are those who may be employed in a specific job for which they require an increased knowledge of IM/IT during their tenure in that billet/position. Their required level of IM/IT expertise is specifically associated with the job they need to accomplish. Almost any individual may be assigned to a position in which they serve as an expert user; the ratings and series listed below are examples provided for understanding.

Table 1. Navy Core IM/IT Officer Identified by Designators

Designator	Description
1610/5/7	Special Duty – Cryptology
6120/5/7	Limited Duty Officer Operations Technician
6180/5/7	Limited Duty Officer (Surface) – Electronics
6190/5/7	Limited Duty Officer (Surface) – Communications
6280/5/7	Limited Duty Officer (Submarine) – Electronics
6290/5/7	Limited Duty Officer (Submarine) – Communications
6420/5/7	Limited Duty Officer – Management in Data Processing
6440/5/7	Limited Duty Officer – Cryptology
6490/5/7	Limited Duty Officer – Security
7180/5/7	Warrant Officer (Surface) – Electronics
7190/5/7	Warrant Officer – Communication (Surface)
7280/5/7	Warrant Officer (Submarine) – Electronics
7380/5/7	Warrant Officer (Aviation) – Electronics
7420/5/7	Warrant Officer – Supervisor in Data Processing
7440/5/7	Warrant Officer – Cryptologic Technician
7490/5/7	Warrant Officer – Security Technician

Appendix

The Navy officers listed in Table 1 are defined as part of the core IM/IT workforce by their designator. Navy officers may be identified as core by their Designator or by their Space, Information Warfare, Command and Control (SIWCC) subspecialty code. To be designated as a core IM/IT professional based on subspecialty code, these officers — who may alternate between assignments in a warfare specialty or staff/restricted line community and their IM/IT subspecialty — must show consistent growth in IM/IT expertise as they progress through their IM/IT billets.

Navy officers in all communities (Fleet Support Officers, other Unrestricted Line Officers, Restricted Line and Staff Corps) may be identified as expert users by their SIWCC subspecialty codes. Any Navy officer, regardless of designator, holding one of these subspecialties, acquired through education or selected assignments may be designated as an expert user.

Table 2. Navy IM/IT Subspecialty Codes

Subspecialty Code	Description
5302 (0055)	Electronic Systems
5303 (0091)	Computer Systems
5500 (0077)	Space Systems Engineering
6100	Information Systems and Operations
6200	Space Information Warfare, Command & Control
6201 (0089)	Information Systems and Technology
6202 (0099)	Modeling, Simulation and Virtual Environments
6203 (0091)	Computer Science and System Design
6204 (0045)	Joint C4I
6205 (0046)	Information Warfare
6206 (0076)	Space Systems
6500	Systems Engineering Integration

Appendix

Table 3. Navy Core Enlisted NECs

Based on the October 2000 NEC Listing

NEC	Description
1327	Fire Control Technician Basic Maintainer
1328	Master Fire Control Technician
1335	UYQ-70 Computer/Display LAN Technician
1412	Special Fixed Communications Maintenance Technician
1415	Combined Shore Communications Maintenance Technician
1416	SNAP II(AN/UYK-62(V)) Maintenance Technician
1420	Surface HF Communications System Maintenance Technician
1424	Communications Equipment (SRQ-4) Technician
1425	Communications Equipment (WSC-3/UHF DAMA) Technician
1427	Communications Equipment (Tactical Data Systems) Technician
1428	Small Combatant Communications Electronic Subsystem Technician
1447	Communications Security Devices (T/SEC/KW-46 T/R) Technician
1450	NAVMACS(V) 5 Shipboard Maintenance Technician
1452	NAVMACS(V) 3 Shipboard Maintenance Technician
1454	DD-963 Communications Systems Technician
1456	FLTSATCOM (CUDIXS/DAMA NAVCOMMSTA) Maintenance Technician
1458	VERDIN/ISABPS Communications Systems Technician
1465	Special Maintenance (AN/GSC-52 (V), GSC-39, FSC-78/79 SHF Satellite Terminal) Technician.
1468	Special Maintenance (SHF SATCOM System) Technician
1480	AN/FAC-6(V) Intersite System Maintenance Technician
1486	Single Audio System (SAS) 1491
FFG-7	Class Navigation Electronics Subsystem Technician

Appendix

Table 3. Navy Core Enlisted NECs (cont'd)

NEC	Description
1493	Tactical Support Communications (TSCOMM) Replacement Program Maintenance Technician
1494	LHD Class Radio Communications System Maintenance Technician
14CM	SSN Radio Frequency (RF) Equipment Technician
14RM	Former IT (SS)
14RO	SSN Radio Frequency (RF) Equipment Operator
14SM	SWS Navigation System Maintenance Technician
14TM	TRIDENT I/II Radio Frequency (RF) Equipment Maintenance Technician
14TO	TRIDENT I/II Radio Frequency (RF) Equipment Operator
14ZA	AN/BRD-7 Submarine Radio Direction Finding (RDF) Set Maintenance Technician
1613	Command Center Maintenance Technician
1615	Shipboard Tactical Data Systems Technician
1622	CDS Upgrade Computer/Peripheral Maintenance Technician (CG-16/27 CGN-36 and DDG-993 Class)
1623	Data Communications LINK Maintenance Technician
1624	AN/UYQ-21 Computer Display System Maintenance Technician
1646	FLTSATCOM (SSIXS-OPCONCEN) Maintenance Technician
1647	NCCS Ashore Maintenance Technician
1654	Intelligence Center Maintenance Technician
1656	CV/CVN Combat Direction System (CDS)/(ASWM) Computer/Peripheral Subsystem Maintenance Technician
1657	CV-ASWM Fast Time Analyzer Subsystem Upgrade (FTAS-U) Systems Technician
1658	LHD 1 Class ITAWDS Computer/ Peripheral Subsystem Maintenance Technician
1671	CG-26/CGN-9/CGN-38/DDG20/FFG-7/LHA-1 Class Computer/Peripheral Technician
1672	DD-963 Class Computer/Peripheral Technician

Appendix

Table 3. Navy Core Enlisted NECs (cont'd)

NEC	Description
1673	LHA Class Computer and Associated Subsystem Technician
1674	LHA Integrated Tactical Amphibious Warfare Data System (ITAWDS) Maintenance Technician
1678	Shipboard Non-Tactical ADP Program (SNAP) III Maintenance Technician
1684	CG/CGN/DDG CDS Upgrade Data Display Technician
16ET	Former DS
16FC	Former DS
2301	Enlisted Frequency Manager
2306	Computer Based Training Technician
2318	Communications System Technical Control Operator
2319	Communication System Technical Control Supervisor
2321	Surface Communication Systems Operator
2354	FLTSATCOM (SSIXS-OPCONCEN) Operator
2358	SHF SATCOM Systems Operator
2363	Strategic SHF SATCOM Systems/DSCS Operator
2375	Tactical Support Communications (TSCOMM) Replacement Program System Operator
2376	LHD Class Radio Communications Systems Controller.
2378	VERDIN/ISABPS Shore Communications System Operator
2379	Transmission System Technician
23EY	Submarine Radioman Strategic Communications (STRATEGICOMM) Equipment Technician
23JH-23JS	Submarine Radioman Tactical Communications (TACTICOMM) Equipment Technician

Table 3. Navy Core Enlisted NECs (cont'd)

NEC	Description
23MZ-23NJ	Submarine Radioman Communications (SUBCOMM) Combined Maintenance Technician
23SM	SSN ECS Maintenance Technician
23SO	SSN ECS Operator
23JH-23JS	Submarine Radioman
23TA-23TC	Trident Radioman Exterior Communications Sub-Systems (ECS) Operations and Maintenance Technician
23TM	TRIDENT ECS Maintenance Technician
23TO	TRIDENT ECS Operator
2708	OSIS Baseline Upgrade (OBU) System Manager
2709	Joint Force Air Component Commander (JFACC) System Administrator
2720	NTCS-A System Administrator
2730	SNAP III System Administrator
2735	Information Systems Administrator
2743	Computer Programmer (FORTRAN)
2755	AN/UYK-65 System Supervisor (SNAP I)
2756	AN/UYK-65(V) System Operator (SNAP I)
2757	CV-ASWM Data Processing System Operator
2776	Navy Commands and Control System (NCCS) Ashore System Manager
2777	Tactical Support Center (TSC) Data Processing System Operator
2779	Information System Security Manager
2780	Network Security Vulnerability Technician
2781	Advanced Network Analyst
2782	Defense Message System Administrator

Appendix

Table 3. Navy Core Enlisted NECs (cont'd)

NEC	Description
4778	Fiber Optic Data Multiplex System (FODMS)
9103	Fleet Cryptologic Systems Maintenance Technician
9126	SEAMARK Advanced Operator Maintainer
9179	NEWSDEALER Managers Course
9188	Navy Integrated Cryptologic Communications Systems Specialist
9228	COMSAT Systems Maintenance Technician
9245	NEWSDEALER System Maintenance Technician
9301	Entry Level Programmer/Analyst
9302	Cryptologic Network Configuration Manager
9303	Communication Information Systems Course
9304	Database Administrator

Table 4. Marine Corps Core Officer MOSs

USMC IT officers spend three-quarters (or more) of their careers in IT or IT-related billets.

MOS	Description
0602	Command and Control Systems Officer
2510	Network Management Officer
4010	Data Systems Software Officer
2802	Communications and Electronics Maintenance Officer
2805	Data/Communications Maintenance Officer
2810	Telephone Systems Officers
9646	Data Systems Specialists
9648	Management, Data Systems Officer
9658	C3 Systems Officer

Appendix

Table 5. Marine Corps Enlisted Core IM/IT MOSs

MOS	Description
0612	Field Wireman
0613	Construction Wireman
0614	Unit Level Circuit Switch Operator/Maintainer
0619	Wire Chief
0621	Field Radio Operator
0622	Mobile Multi-Channel Equipment Operator
0623	Transportable Multi-Channel Equipment Operator
0624	High Frequency Communication Central Operator
0626	Fleet SATCOM Terminal Operator
0627	Ground Mobile Forces SATCOM Operator
0629	Radio Chief
0648	Radio Frequency Management Technician
2591	Communications Information Systems Chief
2811	Telephone Technician
2813	Cable Systems Technician
2818	Personal Computer (PC)/Tactical Office Machine
2821	Computer Technician
2822	Electronic Switching Equipment Technician
2823	Technical Controller
2826	AN/MSC-63A Maintenance Technician
2827	Tactical Electronic Reconnaissance
2831	Multi-Channel Equipment Repairer
2832	Multi-Channel Equipment Technician

Table 5. Marine Corps Enlisted Core IM/IT MOSs (cont.)

MOS	Description
2833	Fleet Satellite Terminal Technician
2834	Satellite Communications (SATCOM) Technician
2841	Ground Radio Repairer
2842	PLRS Maintenance Technician
2847	Telephone System Personal Computer Intermediate
2862	Ground Data/Communications Technician
2867	AN/TSC-120 Radio Technician
2871	Test Measurement & Diagnostic Equipment Technician
2874	Metrology Technician
2881	Communications Security Equipment Technician
2887	Counter Mortar Radar Repairer
2891	Data/Communications Maintenance Chief
4066	Small Computer Systems Specialist
4067	Application Programmer
4068	Data Network Technician
4099	Data Processing Chief

Appendix

Table 6. Sample Navy and Marine Corps Enlisted Expert Users

Navy Rating / Marine Occupation Fields	Description
OS, IS, AW, EW, AG	Communications and Intelligence Specialists
STG & ET (not the Core NECs), AT, FC	Electronic Equipment Repairmen
AE, AM, GSE, EM, IC, EN, HT, DC	Electrical/Mechanical Equipment Repairmen
YN, PN, SK, DK, AZ, AK, CTA, LI, HM	Functional Support and Administration
QM, SM, BM	Seamanship Specialists
01XX	Personnel and Administration
02XX	Intelligence
04XX	Logistics
05XX	Marine Air-Ground Task Force Planning
26XX	Signals Intelligence/Ground Electronics Warfare
30XX	Supply, Administration and Operation
59XX	Electronics Maintenance
63XX, 64XX	Avionics
66XX	Aviation Supply
68XX	Weather Service
72XX	Air Control/Air Support/Antiair Warfare

Appendix

Table 7. Civil Servant Core Occupational Series

Occupational Series	Primary Occupational Title
301	Information Management Specialist; Data Management; TQL
303	Visual Information Clerk; Data Clerk; Information Processing Assistant; TQL Assistant
332	Computer Operation
334	Computer Specialist
335	Computer Clerk and Assistant
356	Data Transcriber
357	Coding
382	Telephone Operating
385	Teletype Operations
390	Telecommunications Processing
391	Telecommunications
392	General Telecommunications
394	Communications Clerical
850	Electrical Engineering
854	Computer Engineering
855	Electronics Engineering
856	Electronics Technician
1001	General Arts and Information
1071	Audiovisual Production
1084	Visual Information
1410	Librarian
1515	Operations Research

Appendix

Table 7. Civil Servant Core Occupational Series (cont'd)

Occupational Series	Primary Occupational Title
1550	Computer Scientist
2502	Telecommunications Mechanic
2504	Wire Communications Cable Splicing
2508	Communication Line Installing & Repairing
2511	Miscellaneous Wire Communications Equipment Installation and Maintenance
2601	Miscellaneous Electronic Equipment Installation and Maintenance
2602	Electronic Measurement Equipment Mechanic
2604	Electronics Mechanic
2608	Digital Computer Mechanic
2610	Electronic Integrated Systems Mechanic
3736	Circuit Board Making

Table 8. Sample Civil Servant Expert User Occupational Series

Occupational Series	Primary Occupational Title
0080	Security Administrator
0301	Program Management
0340	Program Management
0343	Program Analyst
0560	Budget Analyst
0861	Aerospace Engineer